

1337 S. 46th Street Building 201 Richmond, CA 94804

Date:

7/8/2016

Subject:

Analytical Testing Results - Project R16N02

SDG: 16153A

From:

Peter Husby, Director

EPA Region 9 Laborator

EMD-3-1

To:

Eugene E. Bromley

**NPDES Permits Section** 

WTR-2-3

Attached are the results from the analysis of samples from the **Southern California Oil Platforms Spring 2016** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC:

Colby Tucker, Enforcement, Water Section

Susan Zaleski, BOEM James Salmons, BSEE

Analyses included in this report:

Metals by ICP

Ammonia as N

Semivolatile Organic Compounds by GC/MS

Abalone Toxicity

1337 S. 46th Street, Building 201, Richmond, CA 94804 Phone:(510) 412-2300 Fax:(510) 412-2302

**NPDES Permits Section** 

Project Manager: Eugene E. Bromley Project Number: R16N02 Reported: 07/08/16 11:10 75 Hawthorne Street

Project: Southern California Oil Platforms Spring San Francisco CA, 94105

2016

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
Gina	1606001-01	Water	05/31/16 08:00	06/01/16 10:10
Gina - Duplicate	1606001-02	Water	05/31/16 08:00	06/01/16 10:10

#### SDG ID 16153A

#### Work Order(s)

#### 1606001

The samples were received at 10 degrees C, which is above the recommended temperature range of 2 - 6 degrees C. No significant effect on sample results is anticipated.

#### Oil and Grease Testing:

Sample containers provided for oil and grease analysis were delivered to Curtis and Thompkins Laboratory in Berkeley, CA.

#### Abalone Toxicity Testing:

Requested analysis was for abalone development toxicity tests using Haliotis rufescens (red abalone) following Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/600/R-95/136 and USEPA Region 9 Laboratory SOP #1004, RED ABALONE (Haliotis rufescens) LARVAL DEVELOPMENT TOXICITY TEST. A concurrent reference toxicity test was conducted for quality control as specified in the method. Statistical analyses were conducted using the CETIS statistical database program, version 1,9,0.8 for the reference toxicity test and produced water toxicity tests.

The test concentrations were based on the oil platform NPDES general permit requirements using the Test of Significant Toxicity (TST) approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010). The chronic WET permit limit that must be met is rejection of the null hypothesis (Ho). Platform Gina results rejected the null hypothesis and is reported as Pass. All QA/QC criteria were

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Sample Results

Analyte		Reanalysis / Extract R	esult	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID:	1606001-01							Wat	er - Sample	ed: 05/31/16 08:00
Sample ID: Chromium	Gina		ND	U	100	ug/L	B16F019	Total Me 06/06/16	tals by EPA 06/07/16	200 Series Methods 200,7
Copper			ND	U	100	v	"	п	H	200.7
Zine			770		100	n	**	v	н	200.7
Sample ID:	Gina						Semivolatile	Organic Con	nnounds by	EPA Method 8270D
Benzo(a)anthrac	ene		ND	U	47	м	B16F006	06/01/16	06/10/16	8270D
Chrysene			ND	U	47	и	u	0	11	8270D
Benzo(b)fluoran	thene		ND	J, Q2, U	47	н	9	н	79	8270D
Benzo(k)fluoran	thene		ND	J, Q2, U	47	п	17	М	41	8270D
Benzo(a)pyrene			ND	U	47	**	17	н	0	8270D
Dibenz(a,h)anthr	acene		ND	υ	47	v	P	N	u	8270D
Surrogate: Terph	enyl-d14			111 %	47-130%		4	it	11	
Sample ID: Ammonia as N	Gina		44	4. A. C. M. A. M. A. M. M. A.	0.50	mg/L	Conventional Cl B16F062	nemistry Para 06/15/16		PHA/EPA Methods 350.1
Sample ID: Test of Significat	Gina nt Toxicity		Pass			%	B16F181	Aquati 06/01/16		est by EPA Methods TOX_SOP1004
Lab ID:	1606001-02							Wate	er - Sample	ed: 05/31/16 08:00
Sample ID: Chromium	Gina - Duplicate		ND	U	100	ug/L	B16F019	Total Me 06/06/16	tals by EPA 06/07/16	200 Series Methods 200.7
Copper			ND	U	100	11	*	н	11	200.7
Zinc			860		100	11	н	н	"	200.7
Sample ID: Benzo(a)anthrace	Gina - Duplicate		ND	U	50	et	Semivolatile B16F006	Organic Con 06/01/16	ipounds by 1 06/10/16	EPA Method 8270D 8270D
Chrysene			ND	υ	50	14	**	tı .	v	8270D
Benzo(b)fluorant	hene		ND	J, Q2, U	50	н		o o	"	8270D
Benzo(k)fluorant			ND	J, Q2, U	50	н	0		м	8270D
Benzo(a)pyrene			ND	U	50	п	D	н	ы	8270D
Dibenz(a,h)anthr	acene		ND	U	50	11	19	м	М	8270D
Surrogate: Terph	enyl-d14			109 %	47-130%		н	"	n	
Sample 1D: Ammonia as N	Gina - Duplicate	And and a second	44		0.50	mg/L	Conventional Ch B16F062	emistry Para 06/15/16	meters by A 06/15/16	PHA/EPA Methods 350.1



# **United States Environmental Protection Agency**

# **Region 9 Laboratory**

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San Francisco CA, 94105

**Quality Control** 

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limi
Batch B16F006 - 3520C CLLE - SVOCs							•	ored: 06/01/16	•	
Blank (B16F006-BLK1)				Semiv	otatile Orga	inic Compou	nas by EP.	A Method 8270	D - Quanty	Conti
Benzo(a)antitracene	ND	U		l ug/L						
Chrysene	ND	υ		1 "						
Benzo(b)fluoranthene	ND	υ		i "						
Benzo(k)fluoranthene	ND	υ		1 "						
Benzo(a)pyrene	ND	υ		1 "						
Dibenz(a,h)anthracene	ND	U		1 "	·					
Swrogate: Terphenyl-d14	:	57.1		"	50.0		114	47-130		
LCS (B16F006-BS1)								erannonament mennikalah (MARSHA) (MARSH	or model A VIANA Sain Advantus annu	manhAtahhilini
Benzo(a)anthracene	10.2			l ug/L	10.0		102	67-110		20
Chrysene	10.4			1 "	10.0		104	67-111		20
Benzo(b)fluoranthene	11.9			1 "	10.0		119	60-110		20
Benzo(k)fluoranthene	12.2			l "	10.0		122	65-117		20
Вепzо(а)рутене	10.7			<b>!</b> "	10.0		107	56-110		20
Dibenz(a,h)anthracene	10.2	000000000000000000000000000000000000000	273F000000000000000000000000000000000000	1 "	10.0	20.5 14.1 16.1 16.1 16.1 16.1 16.1 16.1 16.1	102	59-119		20
Surrogate: Terphenyl-d14	<u>:</u>	58.8		"	50.0		118	47-130		
Matrix Spike (B16F006-MSI)		Source: 1606	5001-01							
Benzo(a)anthracene	114		4	49 ug/L	97.4	ND	117	60-120		2
Chrysene	115		4	<b>1</b> 9 "	97.4	ND	118	60-120		2
Benzo(b)fluoranthene	99.8		ž.	49 "	97.4	ND	102	59-119		2
Benzo(k)fluoranthene	111		4	19 "	97.4	ND	114	59-119		2
Benzo(a)pyrene	96.9		4	19 "	97.4	ND	100	46-110		2
Dibenz(a,h)anthracene	94.4	***************************************		49 "	97.4	ND	97	60-120		2
Surrogate: Terphenyl-d14		555		n	487		114	47-130		
Matrix Spike Dup (B16F006-MSD1)		Source: 1600	5001-01							
Benzo(a)anthracene	108		ź	50 ug/L	99.4	ND	108	60-120	5	2
Chrysene	109		5	50 "	99.4	ND	110	60-120	5	2
Benzo(b)fluoranthene	101		5	50 "	99.4	ND	102	59-119	2	2
Benzo(k)fluoranthene	98.9		5	50 "	99.4	ND	100	59-119	12	2
Benzo(a)pyrene	93.4		5	50 "	99.4	ND	94	46-110	4	2
Dibenz(a,h)anthracene	93.9		4 %	50 "	99,4	ND	94	60-120	0.6	2
Surrogate: Terphenyl-d14		539		W	497		108	47-130		

Total Metals by EPA 200 Series Methods - Quality Control

Blank (B16F019-BLK1)

Chromium 10 ug/L ND ND 10 " Copper



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Qualifiere /

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Spile and and WREC

Property   Property	•	
Blank (B16F019-BLK1)   Zinc   ND   U   10   10   10   10   10   10   10	oots - Quant	200 200 200
No		200 200
Boron         313         100         ug/L         300         104         85-115           Calcium         1,080         100         " 1000         108         85-115           Chromium         409         10         " 400         102         85-115           Copper         304         10         " 300         101         85-115           Iron         3,230         100         " 3000         108         85-115           Magnesium         2,150         500         " 2000         108         85-115           Polussium         10,500         2,000         " 10000         105         85-115           Solium         3,290         500         " 3000         110         85-115           Zine         211         80 cree: 1606001-01         " 3000         110         85-115           Matrix Spike (B16F019-MS2)         Source: 1606001-01         " 300         ND 91         70-130           Copper         270         10         " 300         ND 90         70-130           Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01         " 300         ND 90         70-130           Copper         248         10         " 300         ND		200 200
Boron         313         100         ug/L         300         104         85-115           Calcium         1,080         100         " 1000         108         85-115           Chromium         409         10         " 400         102         85-115           Copper         304         10         " 300         101         85-115           Iron         3,230         100         " 3000         108         85-115           Magnesium         2,150         500         " 2000         108         85-115           Polussium         10,500         2,000         " 10000         105         85-115           Solium         3,290         500         " 3000         110         85-115           Zine         211         80 cree: 1606001-01         " 3000         110         85-115           Matrix Spike (B16F019-MS2)         Source: 1606001-01         " 300         ND 91         70-130           Copper         270         10         " 300         ND 90         70-130           Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01         " 300         ND 90         70-130           Copper         248         10         " 300         ND		200 200
Chromium         409         10         " 400         102         \$5-115           Copper         304         10         " 300         101         \$5-115           Iron         3,230         100         " 3000         108         \$5-115           Magnesium         2,150         500         " 2000         108         \$5-115           Sodium         3,290         500         " 3000         110         \$5-115           Sodium         3,290         500         " 3000         110         \$5-115           Ziuc         211         10         " 200         10         \$5-115           Matrix Spike (B16F019-MS2)         Source: 1606001-01         " 3000         ND         90         70-130           Copper         270         100         " 300         ND         90         70-130           Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01         " 300         ND         90         70-130           Copper         248         100         " 300         ND         90         70-130           Copper         248         100         " 300         ND         90         70-130           Zine         948         100 </td <td></td> <td>200</td>		200
Copper         304         10         " 300         101         85-115           Iron         3,230         100         " 3000         108         85-115           Magnesium         2,150         500         " 2000         108         85-115           Potassium         10,500         2,000         " 10000         105         85-115           Sodium         3,290         500         " 3000         110         85-115           Zine         211         10         " 200         105         85-115           Matrix Spike (B16F019-MS2)         Source: 1606001-01           Copper         270         100         " 300         ND         90         70-130           Zine         1,000         " 300         ND         90         70-130           Zine         1,000         " 300         ND         90         70-130           Copper         270         Source: 1606001-01         " 200         766         118         70-130           Matrix Spike Dup (B16F019-MS2)         Source: 1606001-01           Chromium         359         100         ug/L         400         ND         90         70-130           Zine </td <td></td> <td></td>		
Fig. 10		200
Magnesium         2,150         500         " 2000         108         85-115           Potassium         10,500         2,000         " 10000         105         85-115           Sodium         3,290         500         " 3000         110         85-115           Zine         211         10         " 200         105         85-115           Matrix Spike (B16F019-MS2)         Source: 1606001-01           Copper         270         100         " 300         ND 90         70-130           Zine         1,000         " 300         ND 90         70-130           Zine         1,000         " 300         ND 90         70-130           Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01           Chromium         359         100         ug/L         400         ND 90         70-130           Copper         248         100         " 300         ND 83         70-130           Zine         948         100         " 300         ND 83         70-130           Batch B16F062 - General Inorganic - Nitrogen, Ammonia         Experience State Inorganic - Nitrogen, Ammonia           Total Chemistry Parameters by APHA/EPA Method <td< td=""><td></td><td></td></td<>		
Potassium   10,500   2,000   " 10000   105   85-115		200
Sodium   3,290   500   " 3000   110 85-115		200
Zinc   211   10    200   105   85-115		200
Matrix Spike (B16F019-MS2)   Source: 1606001-01		200
Chromium         366         100 ug/L         400 ug/L         ND         91 T0-130 ug/L         70-130 ug/L         400 ug/L         ND         90 ug/L         70-130 ug/L         70-130 ug/L         70-130 ug/L         400 ug/L		200
Copper         270         100         " 300         ND         90         70-130           Zinc         1,000         100         " 200         766         118         70-130           Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01           Chromium         359         100         ug/L         400         ND         90         70-130           Copper         248         100         " 300         ND         83         70-130           Zinc         948         100         " 200         766         91         70-130           Batch B16F062 - General Inorganic - Nitrogen, Ammonia         Econventional Chemistry Parameters by APHA/EPA Method           Blank (B16F062-BLK1)           Ammonia as N         ND         U         0.05         mg/L		
Zinc   1,000   100   200   766   118   70-130     Matrix Spike Dup (B16F019-MSD2)   Source: 1606001-01     Chromium   359   100   ug/L   400   ND   90   70-130     Copper   248   100   " 300   ND   83   70-130     Zinc   948   100   " 200   766   91   70-130     Batch B16F062 General Inorganic - Nitrogen, Ammonia   Prepared &     Conventional Chemistry Parameters by APHA/EPA Method Blank (B16F062-BLK1)     Ammonia as N   ND   U   0.05   mg/L		20
Matrix Spike Dup (B16F019-MSD2)         Source: 1606001-01           Chromium         359         100 ug/L         400         ND         90         70-130           Copper         248         100 "         300         ND         83         70-130           Zinc         948         100 "         200         766         91         70-130           Batch B16F062 General Inorganic - Nitrogen, Ammonia         Prepared & Conventional Chemistry Parameters by APHA/EPA Method           Blank (B16F062-BLK1)           Ammonia as N         ND         U         0.05 mg/L         wg/L         V		20
Chromium         359         100 ug/L         400 ND         90 70-130 recognition           Copper         248         100 " 300 ND         83 70-130 recognition           Zine         948         100 " 200 766 91 70-130 recognition         Prepared & Conventional Chemistry Parameters by APHA/EPA Method           Blank (B16F062-BLK1)           Ammonia as N         ND         U         0.05 mg/L		20
Copper         248         100         " 300         ND         83         70-130           Zinc         948         100         " 200         766         91         70-130           Batch B16F062 - General Inorganic - Nitrogen, Ammonia         Prepared & Conventional Chemistry Parameters by APHA/EPA Method           Blank (B16F062-BLK1)           Ammonia as N         ND         U         0.05         mg/L         V		
Zinc         948         100 " 200 766 91 70-130           Batch B16F062 - General Inorganic - Nitrogen, Ammonia         Prepared & Conventional Chemistry Parameters by APHA/EPA Method           Blank (B16F062-BLK1)           Ammonia as N         ND         U         0.05 mg/L         v<	2	20
Batch B16F062 General Inorganic - Nitrogen, Ammonia  Conventional Chemistry Parameters by APHA/EPA Methology Blank (B16F062-BLK1)  Ammonia as N ND U 0.05 mg/L	8	20
Blank (B16F062-BLK1) Ammonia as N ND U 0.05 mg/L	6	20
Blank (B16F062-BLK1)         ND         U         0.05 mg/L	& Analyzed:	06/15/16
Ammonia as N ND U 0.05 mg/L	ods - Quality	y Control
LCS (B16F062-BS1)		
Ammonia as N 5.13 mg/L 5.00 103 90-110		200
Matrix Spike (B16F062-MS2) Source: 1606001-01		
Ammonia as N 49 0.5 mg/L 5.00 44.5 90 90-110		10
Matrix Spike Dup (B16F062-MSD2) Source: 1606001-01	INCLUSION AND COMPANY	
Ammonia as N 49 0.5 mg/L 5.00 44.5 90 90-110	0	10
Batch B16F181 General Biology - Toxicity, Abalone Prepared: 05/29/16	Analyzed:	06/01/16
Aquatic Toxicity Test by EPA Metho	-	
Reference (B16F181-SRM1)	•	
EC 50 43 ppb 52.2 82 55.1-144.9		



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San Francisco CA, 94105

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Reported: 07/08/16 11:10

#### Qualifiers and Comments

Q2 The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary).

J The reported result for this analyte should be considered an estimated value.

U Not Detected

NR Not Reported

RE1, RE2, etc: Result is from a sample re-analysis.